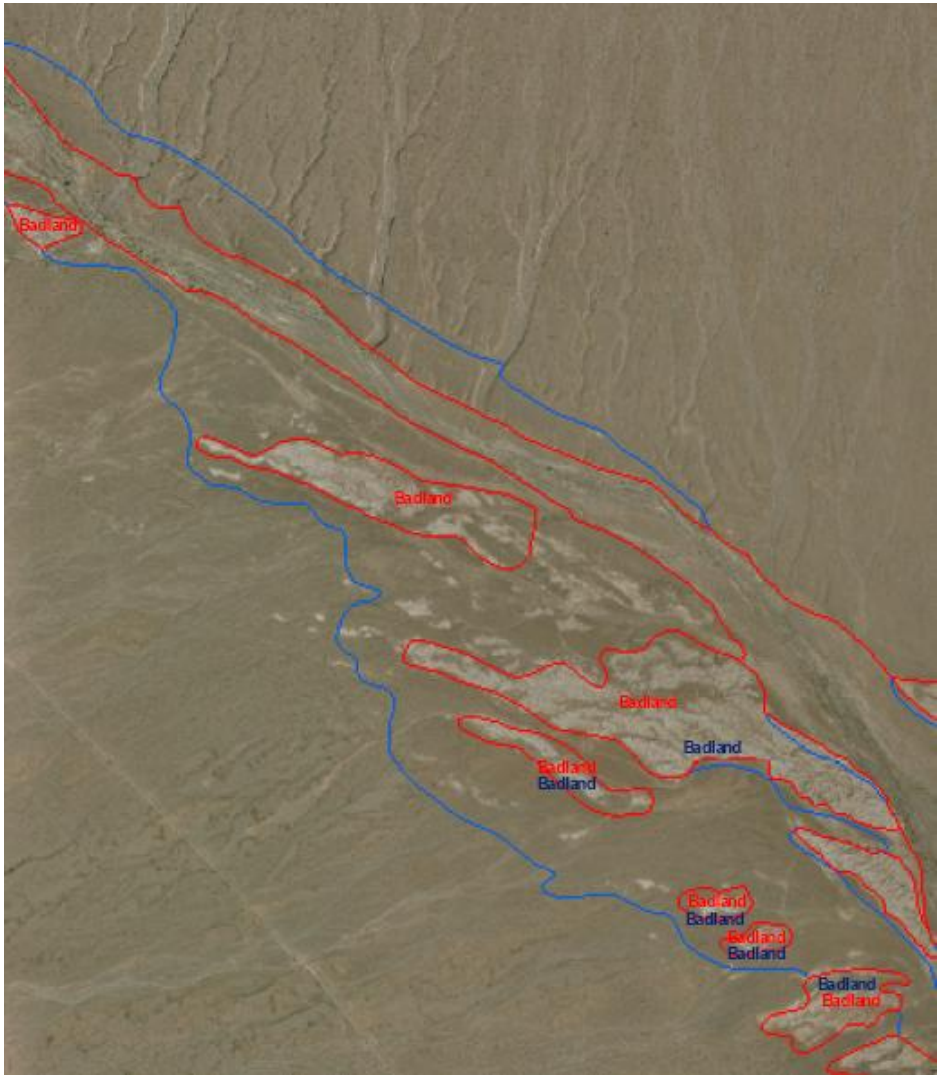
Upper Las Vegas Wash CTA: SOILS

SOILS

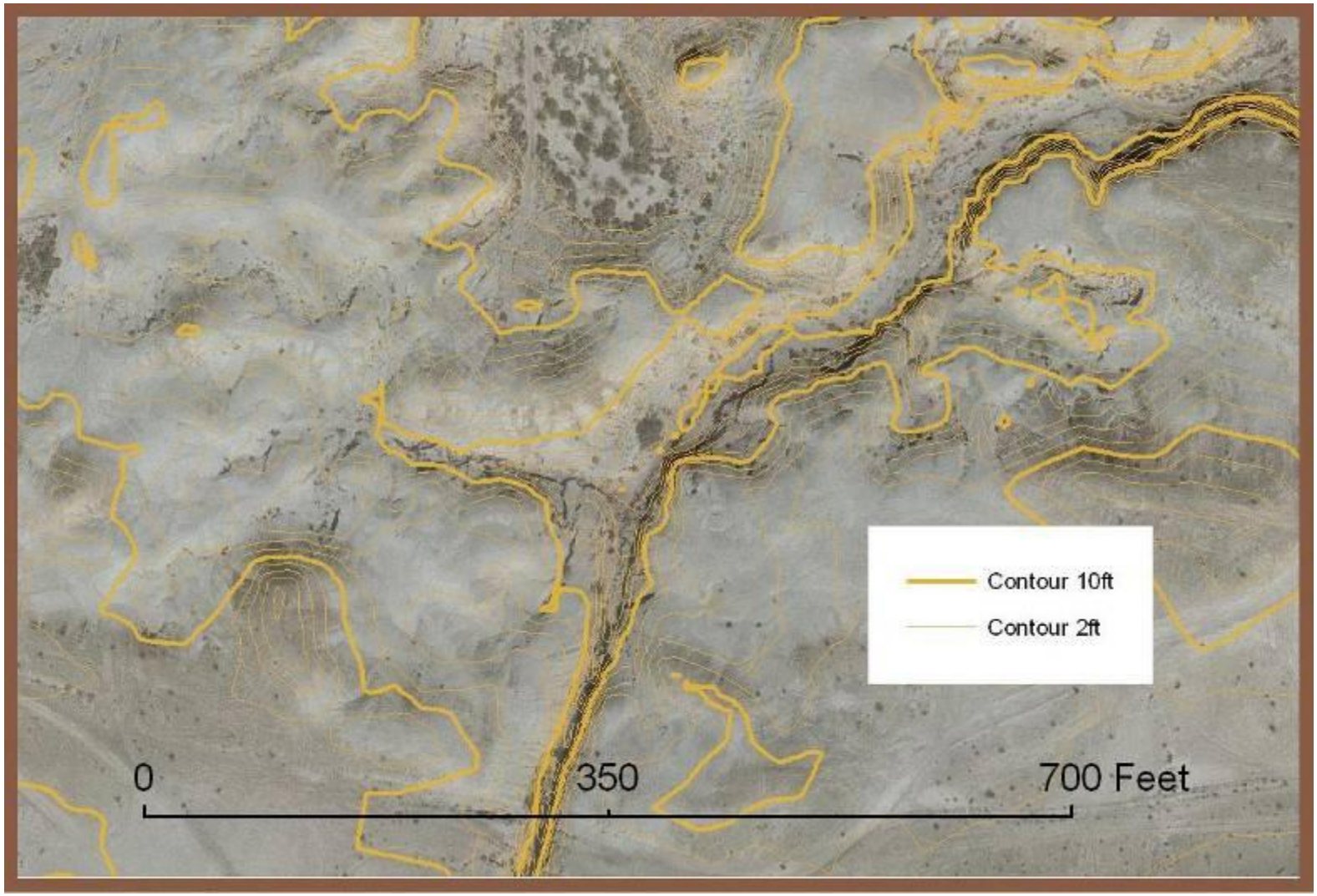
- Refine Soil Map
- Characterize Soils
  - Pedons
  - Surface Soils

Refined Soil Map

- Soil Survey Data-Spring 2007(Blue)
  - Las Vegas Valley Area
  - Clark County Area
- Geographic Information System (GIS)
  - Digital Data
- Refine polygons (Red)

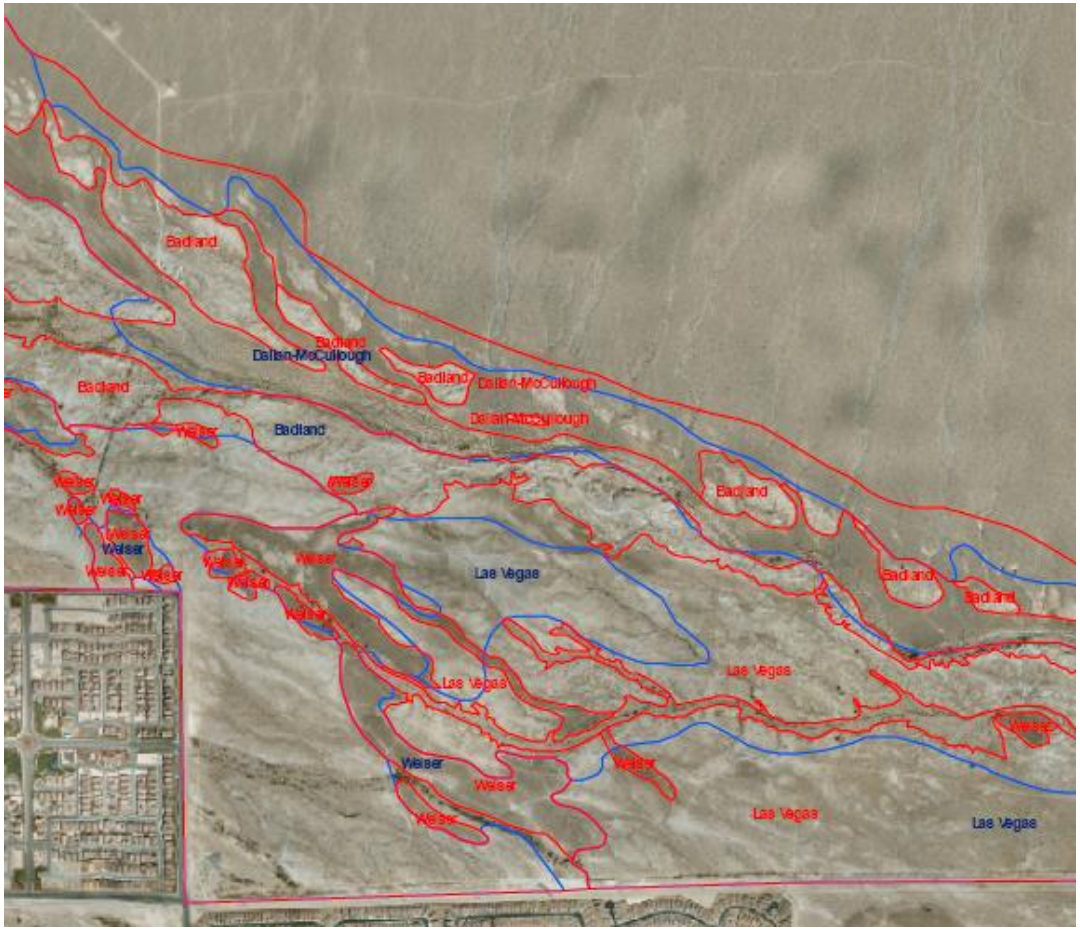


High Resolution
Aerial Photography and Topography



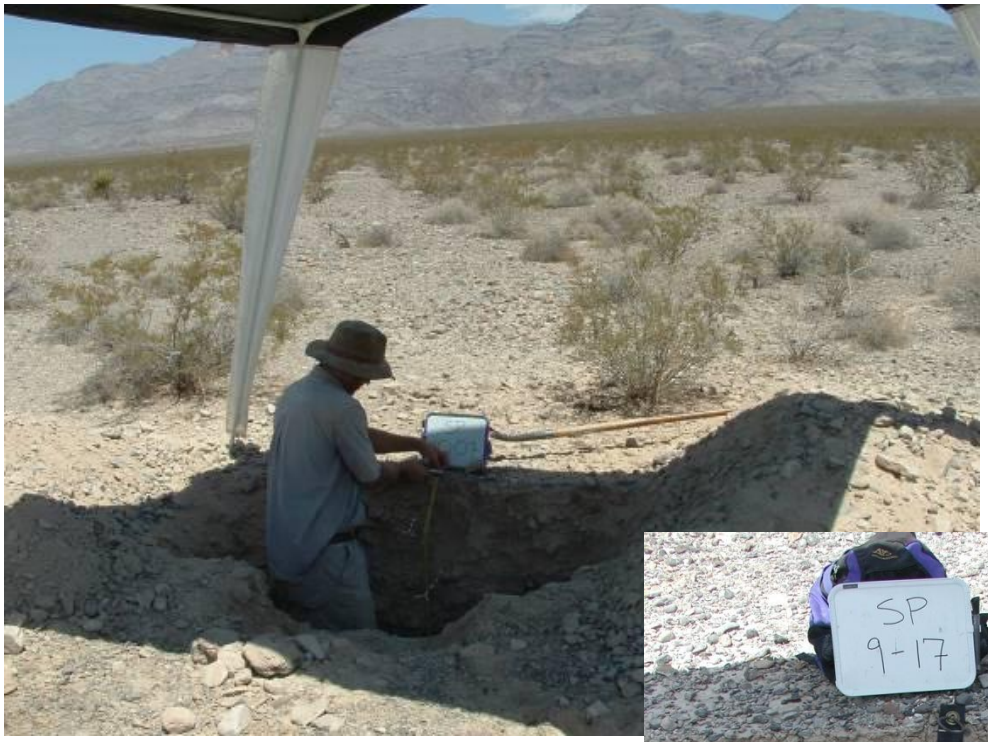
Refined Soil Map

- Better fit tones, landform, relief
- Adjust lines
  - Northwest
- Delineate new polygons
  - Southeast
  - Plants of interest
  - Complex patterns



Develop & Document Soil Map

- 45 pedons (soil profiles)
  - Major vegetation associations
  - Major landscape units
  - Excavated, described, and sampled
    - 26 in June 2007
    - 19 in Feb 2008



Soil Pedons

- Analyzed by genetic horizon
  - Texture
  - Clay%
  - pH
  - Calcium carbonate reaction w/ HCl
  - Electrical conductivity
  - Gypsum
  - Bulk density
  - % Calcified fragments

Refined Soil Map

- Soil Pedons
  - Classified
    - Family level USDA Soil Taxonomy

    e.g., Loamy-skeletal, carbonatic, thermic Typic Haplocalcids
  - Correlated
    - Established series

    e.g., Weiser series
- Used Established Map Units
  - USDA Natural Resources Conservation Service
    - Soil interpretations, chemical &physical data

Upper Las Vegas Wash Soils Map

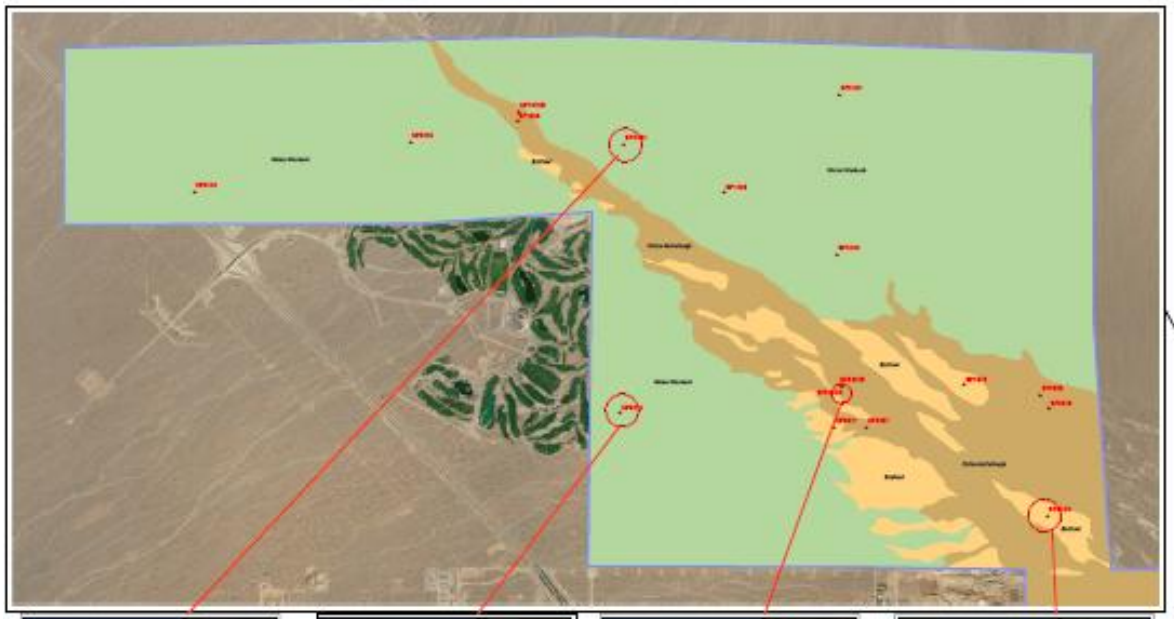
DRAFT July 7, 2008

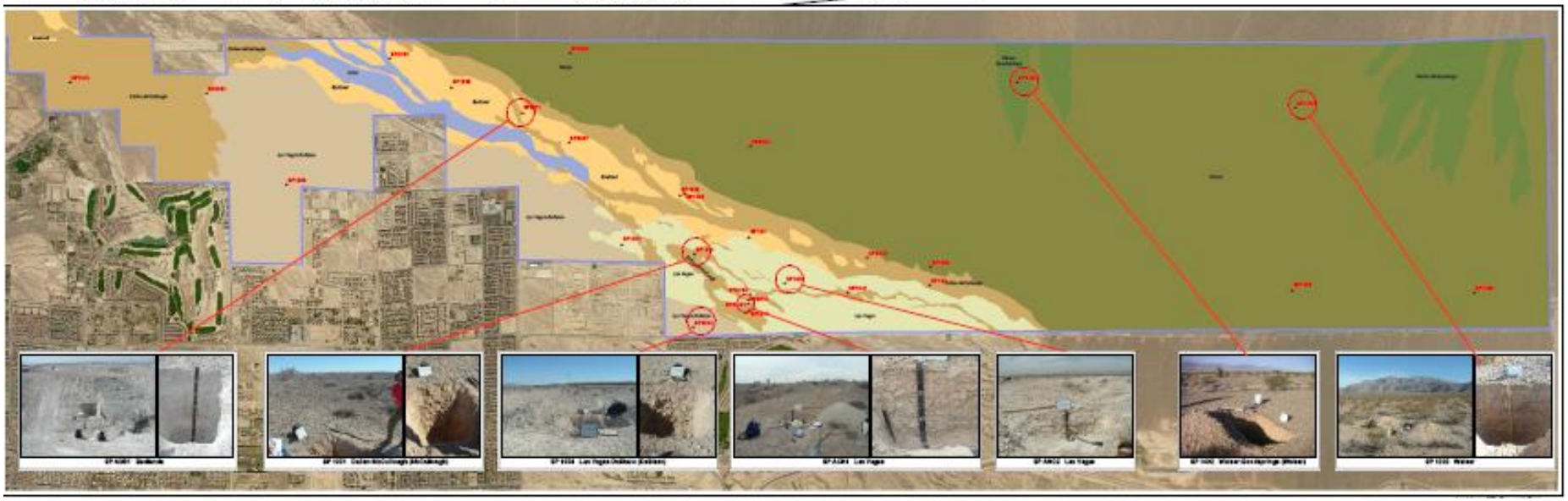
Soil Types

- Arizo
- Badland
- Delan-McCullough
- Las Vegas
- Las Vegas-DeStazo
- Walser
- Walser-Goodsprings
- Walser-Wechech

Soil Pit Locations

0 0.5 1 2 Kilometers



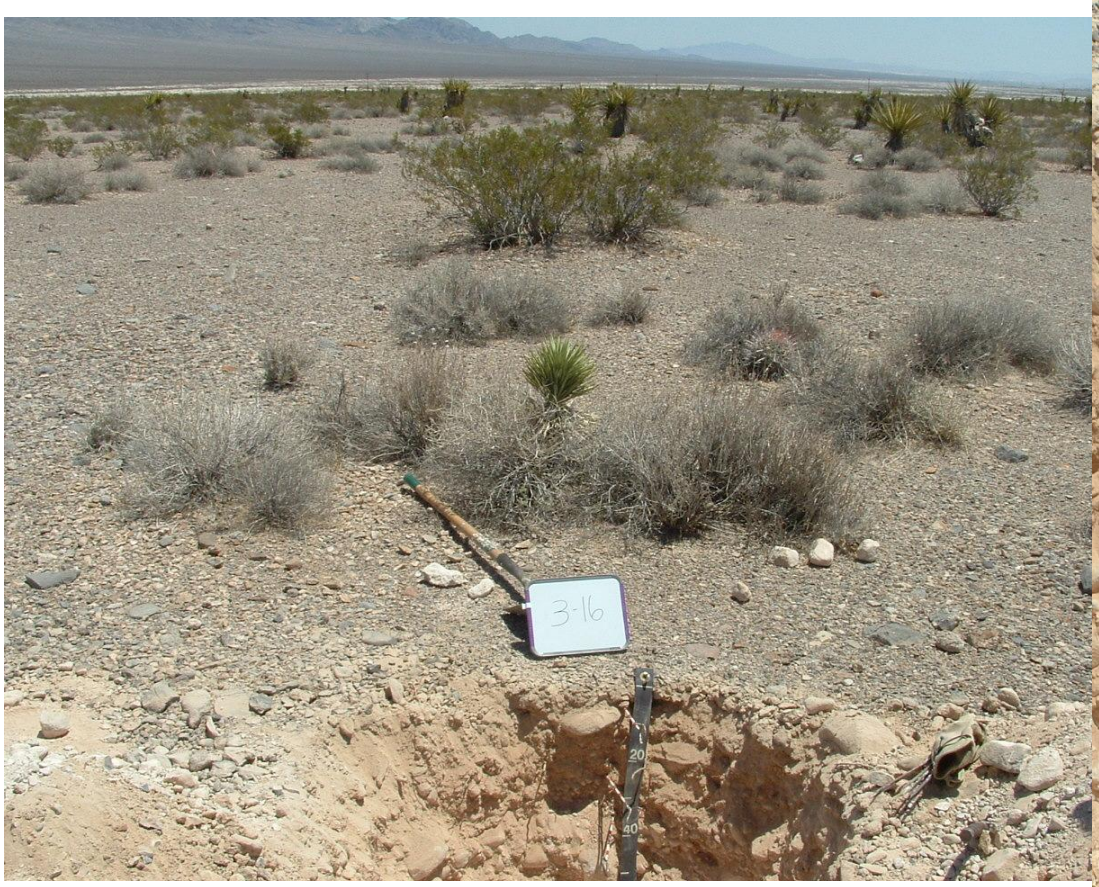


Soil Map Units

- 540—Weiser extremely gravelly fine sandy loam, 2 to 8 percent slopes

Soil Map Units

- 314—Weiser-Wechech association



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DRAFT July 7, 2008

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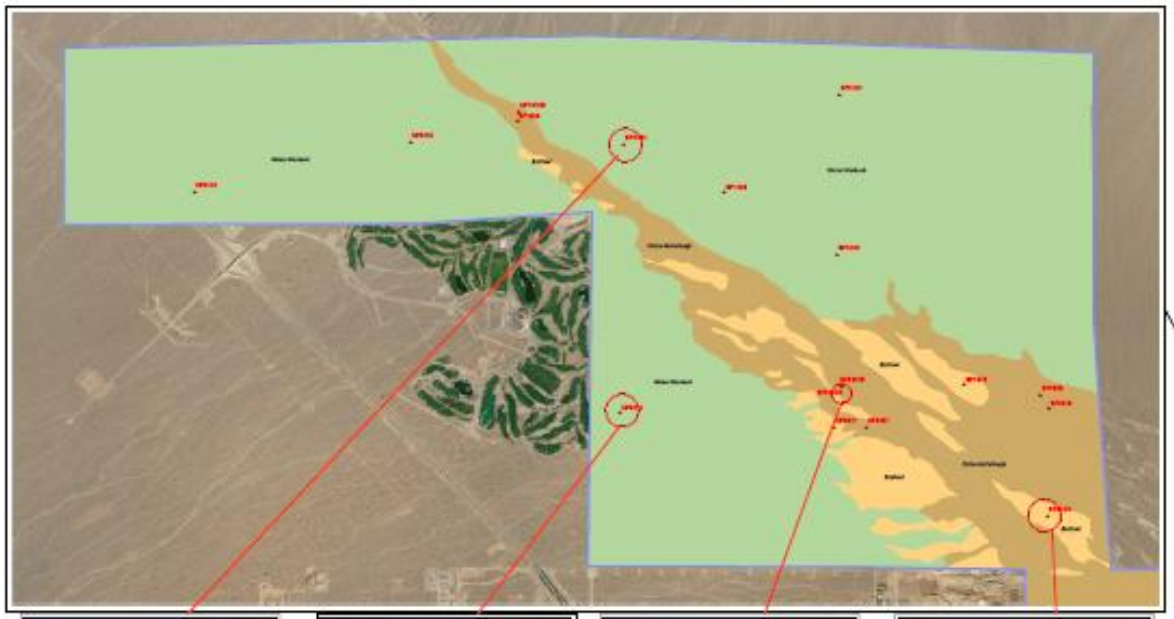

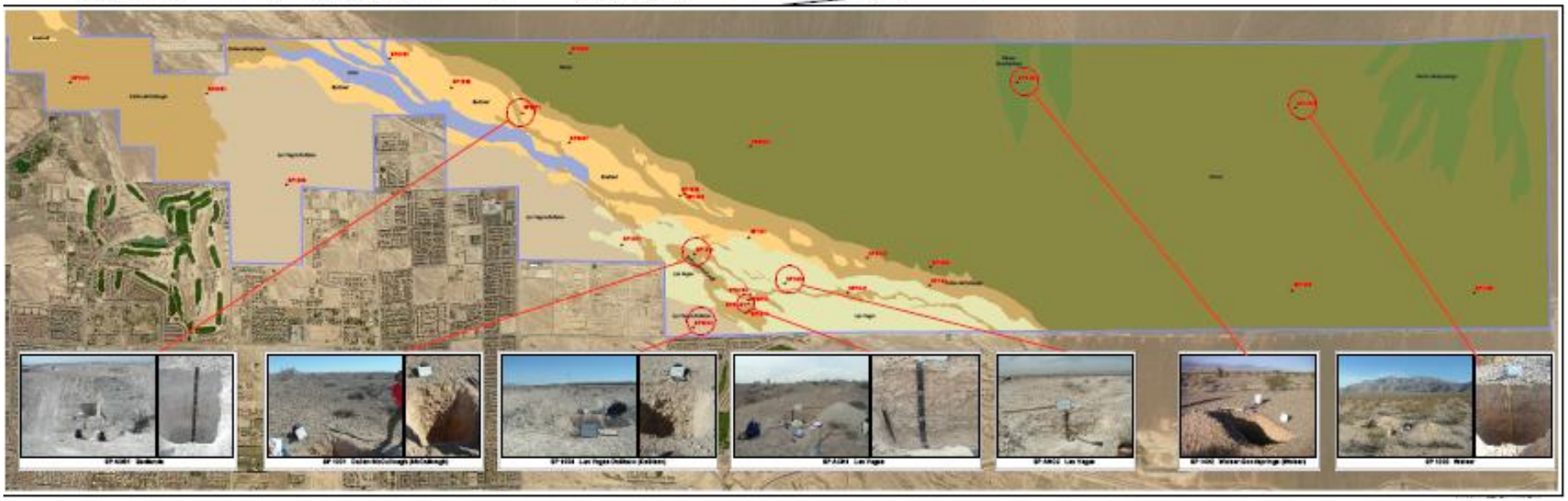

Soil Map Units

- 192—Dalian-McCullough complex, 0 to 4 percent slopes

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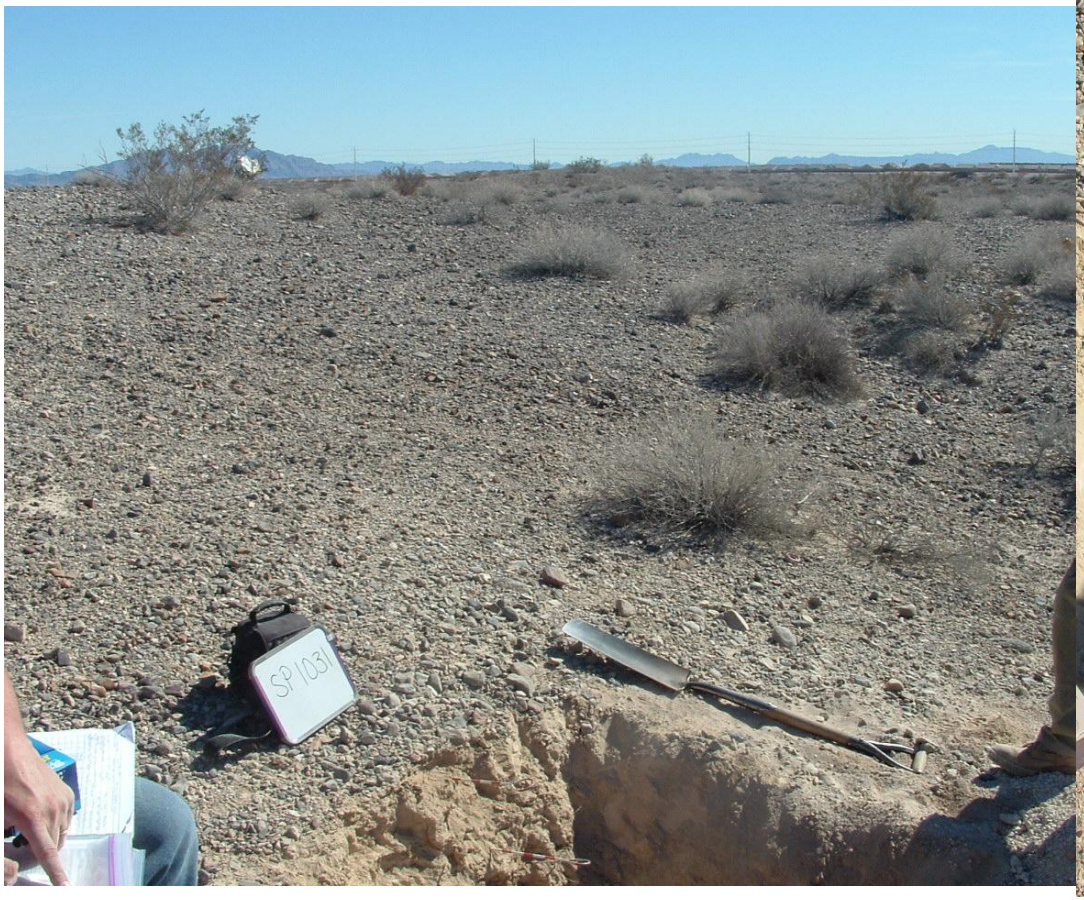

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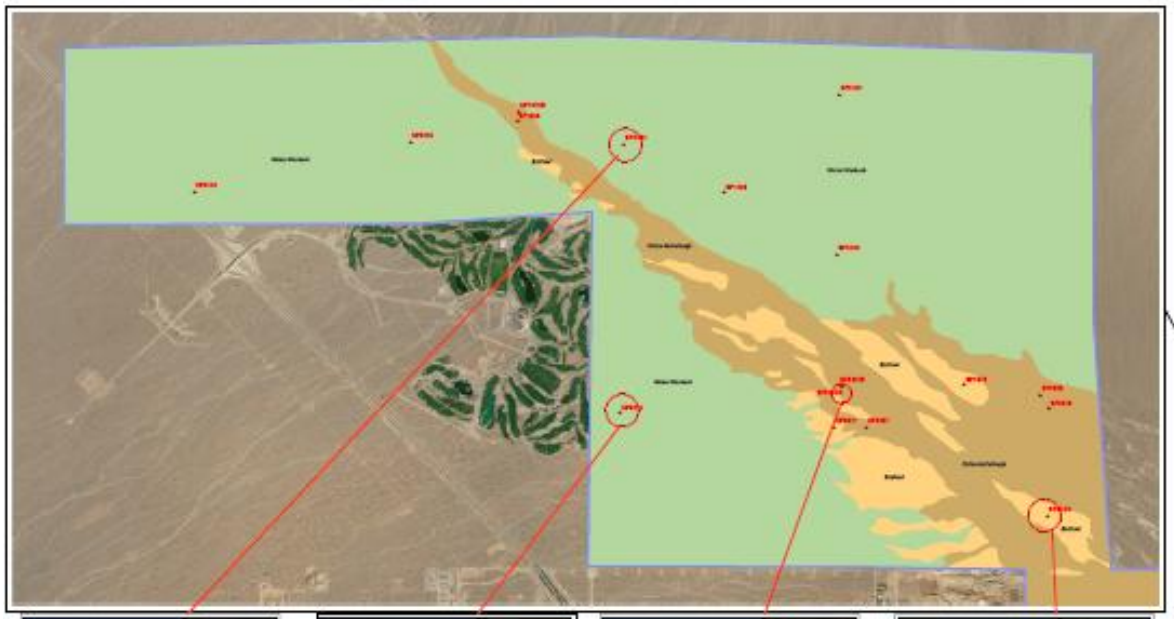
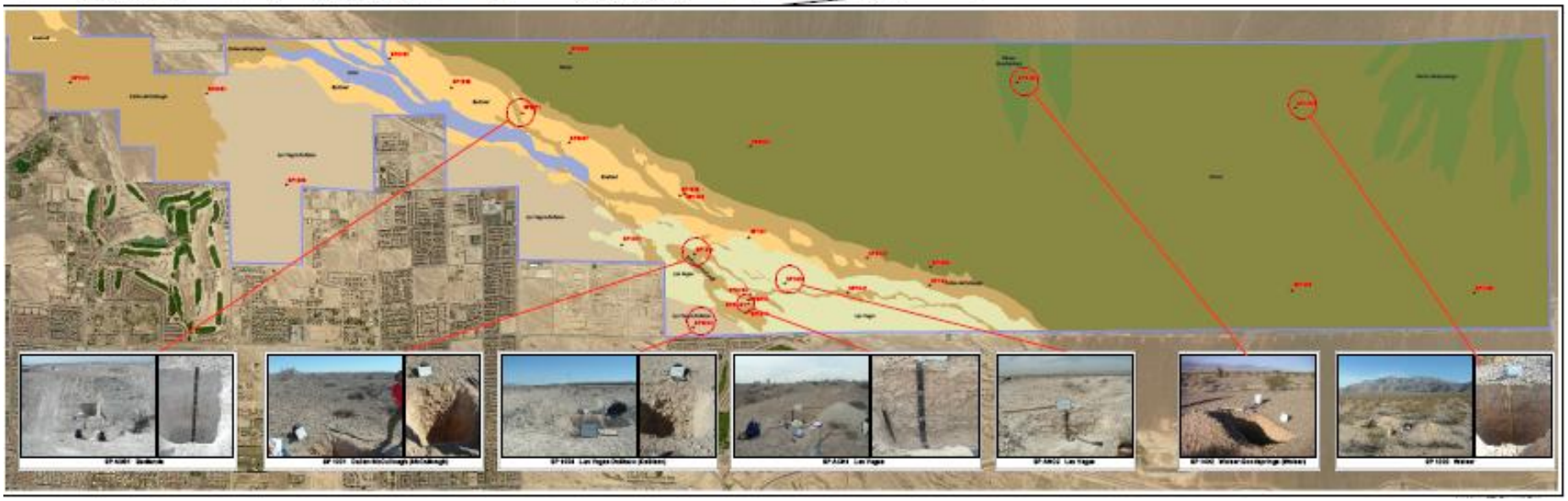


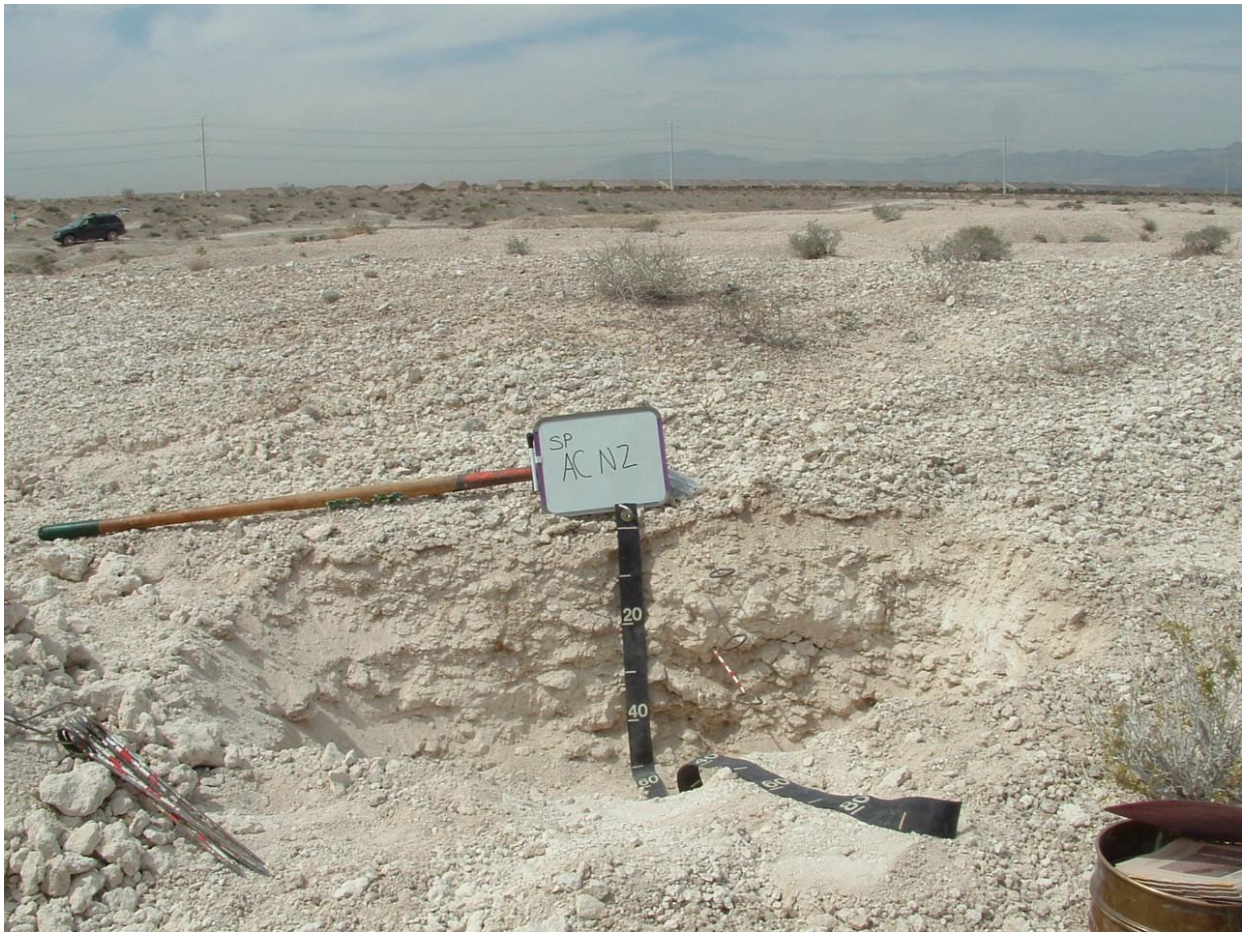


Soil Map Units

- 305—Las Vegas-DeStazo complex, 0 to 2 percent slopes

Soil Map Units

- 300—Las Vegas gravelly fine sandy loam, 0 to 2 percent slopes

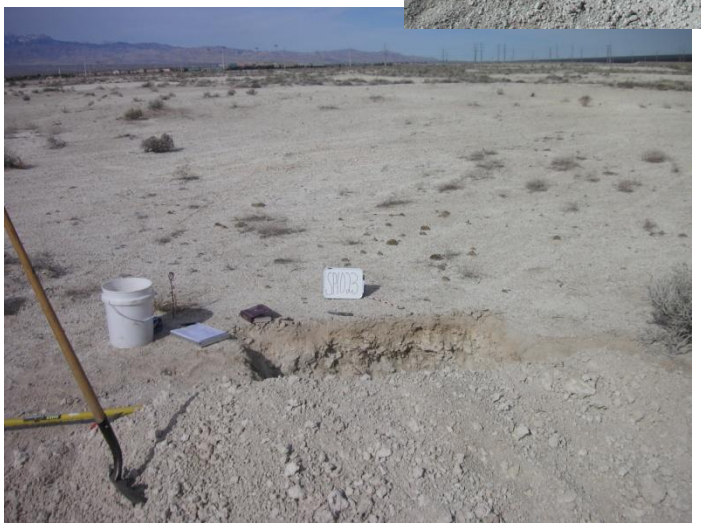


Soil Map Units

- 630—Badland (Not sampled by USDA-NRCS)

Soil Map Units

- 300-Las Vegas and 630-Badland
  - Plants of interest (POI)
  - Basin floor, spring deposits
  - Very highly calcareous
    - Cemented layers, nodules
  - Relict redoximorphic feature
    - Late Pleistocene marsh
    - Exhumed paleosols
  - Gypsum in subsoil
    - Trace (<0.1%) to 5%



Surface Soils

- Vegetation Sampling
  - 0-8 cm (0-3 in.) soil
    - 286 points X 2
      - Presence under plant canopy
      - Absence 50-cm away in open
    - Same analyses as pedons
  - Little difference between presence and absence w/in ARCCAL, ERYCOR, Shrub
  - Plants of interest presence/absence
    - Lower bulk density
    - Higher % calcified fragments
  - Gypsum rare
    - <1% all samples had ≥0.1% gypsum

Surface Soils

- Rare Plant Survey
  - 0-8 cm (0-3 in.) soil
    - 100 points
      - 38 ARCCAL presence
      - 11 ERYCOR presence
      - 51 Absence
    - Same analyses as pedons
  - ARCCAL, ERYCOR
    - Lower bulk density
  - Gypsum rare
    - <3% samples had ≥0.1% gypsum

Surface Soils

- Rare Plant Survey
  - 0-8 cm (0-3 in.) soil
    - 100 points
      - 38 ARCCAL presence
      - 11 ERYCOR presence
      - 51 Absence
    - Same analyses as pedons
  - ARCCAL, ERYCOR
    - Lower bulk density
  - Gypsum rare
    - <3% samples had ≥0.1% gypsum
- Gypsophiles???